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ABSTRACT

This booklet presents educational programs and activities focusing on motor skills for 5- to 9-year-old children and older children with learning problems. The premise of the activities is that the acquisition of motor skills is essential to basic learning. The role of language as a mediator and controller of motor development is emphasized. The first section describes the identification of children with neuromotor problems and the general use of the activities described in the booklet. The second section notes the importance of learning the vocabulary (everyday objects, clothing, body parts, pronouns, actions, spatial relationships, and categorizing terms) that accompanies the activities. In the third section activities are described for: gross motor skills; fine motor skills; body awareness; rhythm training; laterality and cerebral dominance; hand-eye and foot-eye coordination; visual and auditory perception; mime and drama; and problem solving involving motor activity and language. Suggestions are presented for planning programs and individual lessons. The final sections present: a list of useful equipment for the activities; a list of 11 references; and a form for keeping a record of student motor development. (CB)

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Educational Development Programs

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MOTOR EDUCATION

A. E. Tansley

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EDUCATIONAL DEVELOPMENT PROGRAMS

Motor Education

by A. E. Tansley

Communication Skill Builders
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Tucson, Arizona 85733
(602) 323-7500

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About the Author

A. E. Tansley, B.Sc., M.Ed., is a well known and respected expert in the field of early childhood development and remedial education in England.

His many years of experience and practical research as a teacher and as a staff inspector have formed the basis of both theoretical books for teachers and successful series for children, such as *Racing to Read* and *Sound Sense*.

The *Educational Development Programs* also stem from Tansley's wide experience of the education of young children, in particular from his work with teachers on in-service training courses.

Motor Education and *Perceptual Training* suggest ways in which these two aspects of early learning can be structured and integrated, so as to hasten children's acquisition of the basic skills essential to reading, writing, and number work.

Acknowledgments

I am indebted to my former colleague, Dr. R. J. Stanley, for his generous help in teaching me about these neuromotor signs.

I am also indebted to my former colleague, George Davies, and a group of teachers in Fife, U.K., for their assistance in developing this program.

Contents

Foreword ix

Language and Motor Programs for Early Primary Years 1

Language Program 5

Motor Program 9
- Gross Motor Activities 9
- Body Awareness Activities 11
- Fine Motor Activities 25
- Rhythm Training 32
- Laterality and Cerebral Dominance 35
- Hand-Eye and Foot-Eye Coordination 39
- Motor Activities for Training in Visual and Auditory Perception 40
- Mime and Drama 41
- Problem Solving Involving Motor Activity and Language 43
- Suggestions for Planning the Programs and Individual Lessons 44

Equipment and Useful Materials 46

Useful References 47
- Additional Books for Classroom Activities 47

Record Keeping 49

Foreword

These educational programs have resulted from in-service training courses designed to help teachers working with five- to nine-year-old children, and older children with learning problems. As a staff inspector for special education, I initiated and developed a program of screening six-year-old children in primary schools and in-service training courses for headteachers and their staffs.

Since retiring in 1975 to concentrate on writing and lecturing, I have undertaken many in-service training courses throughout the British Isles and abroad. Interest has been shown in the idea of screening young children to provide indications of the type of education best suited to meet individual needs. However, teachers have been particularly enthusiastic about the educational development programs which I have designed to meet these needs in a more systematic and structured way than has perhaps been the case previously. During the in-service courses I have encouraged inspectors and teachers to establish working parties to compile their own programs for different areas of growth: motor, sensory, perceptual, and language.

These motor education programs are my attempt to help in this exciting and satisfying project. I trust this book will be useful to teachers in hastening pupils' acquisition of the motor skills which are, I believe, essential to basic learning, and in preventing some of the failure which often causes so much unhappiness to children and parents.

I am grateful to my former colleagues and many other teachers for their assistance and encouragement.

A. E. Tansley
Birmingham 1980

Language and Motor Programs for Early Primary Years

The use of a Birmingham Screening Procedure and much earlier experience of children with learning difficulties indicated the need for programs designed to encourage motor development in all children. Particular attention to this aspect of development is obviously needed for children with neuromotor problems. At six to seven years of age these latter children often exhibit some of the following signs:

1. General or specific clumsiness
2. Poor gross motor skills including:
   a. inability to crawl with opposite leg and arm moving together (that is, in cross-pattern movement)
   b. inability to walk with cross-pattern movement
   c. inability to balance on either leg with thigh parallel to ground or leg bent at knee and held behind the thigh
   d. inability to hop on either leg
   e. inability to walk on outside of feet with arms still by sides
3. Signs of asymmetry of the skull
4. Difficulty in fine finger movements, such as:
   a. coordinated finger wiggling
   b. closing fingers smoothly, starting with little finger
   c. touching each finger in turn onto fleshy base of thumb
   d. touching tip of thumb with tip of other fingers in turn while counting from one to four
5. Difficulty in holding arms forward with palms downward and turning palms upward four times
6. Difficulty in wrist-rolling with elbows to waist and forearm parallel to ground
7. Inability to perform a movement on one side of the body without unwanted movements on the other side. (For example, fingers of one hand cannot be moved without some movement in the other hand; one wrist cannot be rolled without movement in the other;

hand movements are accompanied by twitching of opposite side of the face.) This lack of unwanted movement is termed failure in motor inhibition and is a significant indicator of neuromotor disturbance.

There are other neurological indicators, but the ones listed above are perhaps the most significant and useful to teachers in improving their observations of children's movements. The presence of these inabilities in preschool children does not necessarily indicate motor problems, but may point to immaturity. Children six years and older who give evidence of three or more of these difficulties in gross and fine motor skills may be in urgent need of a structured program of motor activities systematically applied. These same children are very likely to have accompanying problems in visual perception, reading by a whole word, "look and say" method, writing, and spelling.

To help these children with neuromotor problems as well as all young children, the following motor programs have been developed over a period of some twenty years. They are now widely used in schools in Britain and elsewhere, and many reports of their educational value have been received. They should be used with discrimination—not all children need all the program, or each individual program in its entirety. Nevertheless, four- and five-year-olds will derive benefit from the total use of the programs. In using them for remedial purposes, teachers should begin treatment at those points where the child is experiencing difficulty.

In lectures to in-service courses for advisers, headteachers, and teachers, the author stresses the role of motor development in the total growth of children and mentions the following aspects of motor education which should be included in any comprehensive program:

1. The language of movement, with particular emphasis on prepositions, adverbs, comparative and superlative adjectives, and opposites, and the use of speech as a controller of movement
2. Gross motor and fine motor activity leading to the development of physical skills, body awareness, and controlled movement in space
3. Balance training
4. Rhythmic activities
5. Development of laterality, left-right orientation, and dominance in hand and foot
6. Hand-eye and foot-eye coordination
7. The use of motor activities to anticipate and supplement training in visual and auditory perception, with particular reference to

form perception, visual discrimination, and visual and auditory memory and sequencing

8. Dramatic activities to develop the emotional aspects of body awareness and self awareness, including rigidity and relaxation work
9. Development of endurance, strength and agility, and feelings of well-being and self-worth through physical activity
10. Problem solving by using motor activities and language. At the early primary stage it is the understanding of motor patterns, not the acquisition of skills, which is important in helping children to explore and discover themselves.

The above aspects are mentioned specifically because they seem to be related to learning the basic skills. They should not be stressed to the detriment of the exciting advances which have taken place in physical education in primary schools. It does appear necessary, however, to stress the important role of movement and basic motor patterns as integral parts of children's growth and development and not as isolated activities in the curriculum. The author is convinced that the better a school's program for movement education, the more likely it is that attainment in basic learning will be improved. Close liaison between teachers of movement and the other members of staff is therefore a necessity.

Language Program

The role of language and speech in mediating activity and fostering learning in all the programs is so important that some specific areas of language usage are listed here. The teaching of those parts of speech which are necessary for dealing with relationships involving space, orientation, position, time, direction, rhythm, speed, and categorization is very important. The following vocabulary should be taught in as wide a variety of situations as possible. Children should be encouraged to speak while they are moving or working, to use sentences, and to describe and discuss what they are doing.

This list is intended *only* as a guide to teachers. The learning areas to which the words have particular relevance are in brackets at the end of each listing.

Naming Things

Everyday objects
in the home, school, and neighborhood

Clothing
socks, tights, shoes, tennis shoes, boots, slacks, jeans, dress, skirt, shirt, blouse, tie, cardigan, pullover, jacket, coat, parka, vest, pants [body awareness]

Parts of the body
body, head, face, eyes, ears, nose, mouth, lips, teeth, tongue, eyelids, eyelashes, eyebrows, forehead, hair, chin, cheeks, nostrils, neck, shoulder, chest, stomach, arms, hands, fingers, thumb, elbows, wrists, palms, fingernails, knuckles, waist, hips, legs, feet, toes, toenails, heels, thighs, shins, knees, front, back, side [body awareness]

Pronouns
I, you, he, she, it, we, they, me, him, her, us, them, this, that, these, those, which, who, what

Actions
walk, march, run, skip, hop, jump, step, stop, start, move, begin, stand, sit, lie, kneel, creep, crawl, slide, slither, curl, gallop, roll, stretch, relax, bend, raise, lower, tiptoe, advance, retreat, push, pull, hit, throw, bounce, catch, kick, climb, cross, turn, twist, somersault, drop, tap, clap, shout, whisper, wriggle, wiggle, open, close, touch, read, write, sing, hum, talk, speak, listen [body awareness, gross and fine motor skills]

Describing Spatial Relationships

Direction
up, down, under, over, toward, forward, backward, sideways, right, left, through, about, around, away, upward, downward, nearer, further, across, higher, lower [gross and fine motor skills, body awareness, laterality, visual discrimination, seriation, etc.]

Position
on, off, in, outside, inside, top, bottom, middle, center, between, above, below, over, under, in front, behind, beside, by, at the side of, against, near, far away, distant, facing, next to, along, across, in a line, in a row, side by side, together, touching, level, high, low, on the right, on the left, first, second (etc.), last, there, here [gross and fine motor skills, body awareness, laterality, temporal sequencing, seriation]

Time
now, after, before, later, soon, day, night, morning, afternoon, evening, week, month, year, winter, summer, autumn, spring, Easter, Christmas, begin, end [temporal sequencing, gross and fine motor skills]

Categorizing

Basic shapes
round, circle, square, oblong, rectangle, oval, triangle, cross, diamond, star, equilateral, quadrilateral, line, dot, straight, curved, zigzag, point, corner, angle, side, edge, slope, level, slanting [form perception, visual discrimination, visual/motor activities]

Basic colors
red, blue, yellow, green, white, black, brown, orange, pink, purple [visual discrimination]

Size, similarity, differences, and opposites
big, little, large, small, more, less, fast, slow, quick, tall, short, fat, thin, wide, narrow, high, low, loud, soft, quiet, sweet, sour, pleasant, harsh, gentle, full, empty, heavy, light, hard, soft, same, different, like, unlike, light, dark, all, some, enough, equal [seriation, auditory/visual discrimination, haptics, thinking, basic number concepts]

Comparatives and superlatives
bigger, biggest, larger, largest, etc. (These should be taught at the same time as the adjectives above.) [basic concept development through classification, seriation]

Adverbs
slowly, quickly, smoothly, jerkily, loudly, softly, heavily, lightly, carefully, gently [classification of types of movement and response]

Other words
page, letter, word, sentence, first name, last name, numbers, figures, measure, weigh, stop, capital letter, etc.

Motor Program

The program does not purport to be a fully comprehensive list of activities. It should be viewed as providing representative samples of activities to be included in motor education. Although experience suggests that the use of such activities will establish a firm base upon which learning will develop, research has not proved this unequivocally. The evidence is purely empirical, but is supported by many observations of good teachers. Certainly, the program should not be used in isolation, but as an integral part of a total approach to child development. It is important to see the motor program in relation to the other programs for sensory integration, visual and auditory perception, language, and thinking. The role of motor education in the emotional and social aspects of growth must also be taken into consideration.

GROSS MOTOR ACTIVITIES

Gross motor activities are necessary for all very young children as well as older ones who are clumsy, uncoordinated, and show signs of neuromotor disturbance.

1. Creeping and crawling forward and backward with cross-pattern, rhythmic movement (opposite leg and arm working together) either as a set exercise or incorporated in dramatic or mime activities
2. Learning to stop at a signal
3. Walking with variations in speed and size of step, forward, backward, and sideways left to right, and right to left
4. Walking upstairs and downstairs
5. Marching to music, tambourine beats, clapping, etc. (see rhythm program)
6. Walking, crawling, and pulling the body up and down sloping surfaces

7. Walking like an elephant, a ballerina, a man on the moon, etc.
8. Walking on all fours and on tiptoes
9. Running forward, backward, changing speed and/or direction on a signal
10. Hopping on the spot, forward, backward, to different patterns (for example, *rl, rrll, rrrlrrr,* etc.) and varying the distance
11. Jumping on the spot, over obstacles, high, low, feet together or apart, forward, backward, sideways, to the right, and to the left
12. Skipping (variations as above)—Children with motor problems often find this difficult and need considerable individual help beginning with hopping on alternate feet
13. Rabbit hops forward and backward, duck walk, crab walk, robot walk
14. Rolling from side to side
15. Making the body as tall and short as possible (for example, grow as tall as a tree, as big as a giant)
16. Climbing using wallbars, ropes, climbing frames, benches
17. Attempting a variety of obstacle courses using different gross movements
18. Training visual and auditory memory skills (for example, Walk forward two steps, then jump three times with feet together on the spot, turn around and hop forward four times and sit down: Go.)

Further suggestions for gross movement activities are included in the next program to develop body awareness.

BODY AWARENESS ACTIVITIES

Body awareness and an ability to use the body in space are essential to learning. A simple indication of this is the apparent difficulty in learning basic skills (for example, perception skills, "look and say" reading) displayed by six-year-olds who are unable to produce a reasonable drawing of a person, particularly when fine motor skills are not so poor as to limit the act of drawing.

The majority of children have sufficient motor and sensory activity in the preschool years for the orderly acquisition of a good awareness of body parts, functions, relationship to one another, and use in developing spatial awareness. However, the evidence suggests that many children are in need of motor education with particular emphasis on body awareness training. The following suggested activities will help all young children and are absolutely essential for children who reach school age with obvious signs of poor awareness of their bodies.

The activities in the gross motor program will, of course, help in body awareness training. In using the additional activities given below, the following points should be remembered:

1. Gross movements precede fine movements and distal movement precedes proximal movement.
2. Bilateral movements precede unilateral movements, which are followed by contralateral movements (for example, both arms moving, then one arm moving, then one arm doing one thing and the other arm another thing).
3. Activities can be used to foster the growth of perceptual skills, such as shape and form perception, visual and auditory memory and sequencing, temporal order.
4. A multisensory approach should be used, by giving instructions and stimulation in more than one sensory channel at a time (that is, visual, auditory, tactile, and kinesthetic). The greater the area of the cortex stimulated, the better will be the quality of the acquired body awareness. The more language is used to mediate the activities, the better the end result will be. The language used in this program will also lead to a sounder acquisition of perceptual and conceptual skills.
5. This motor and body awareness training should be continued even when the child begins to experience success in basic subjects.

Activities to Teach Awareness of Body Parts

1. Touching body parts as demonstrated by the teacher or a child (for example, working with a partner). Start with large parts (head, shoulders, arm, legs) then go on to small parts (ears, eyes, hands).
2. Naming body parts as demonstrated visually
3. Touching body parts on a verbal instruction
4. Naming body parts as touched by the teacher or a partner, first with the eyes open, and then closed
5. Touching parts of parts (parts of head, arm, trunk, feet, eyes)

These activities should be done in various body positions—standing, sitting, kneeling, supine, and prone. They can be used to build programs of visual, auditory, kinesthetic, and tactile memory and sequencing. For example, demonstrate three body parts and ask the child to touch the parts in the correct sequence, then ask the child to say what parts were touched. This technique can be used in all the programs.

Responses in all the above activities should eventually become rapid and accurate.

Activities to Teach Body Coordinates and Awareness of Personal Space

1. Teach right side and left side. Red bands can be used to indicate the right arm and leg and/or yellow colored bands for the left side. (See Laterality and Cerebral Dominance Program for further exercises and activities.)
2. Teach front and back of the body and the appropriate body parts (for example, front of leg, back of head, lie on your back).
3. Progress to activities such as giving instructions to a child sitting in a big hoop. (For example, sit at the front, at the back, at the side, touch the hoop with your hands, knees, forehead, touch the hoop with as many parts of your body as you can.) Using hoops for crawling through, climbing over and under, forward, and backward. Children working in pairs with hoops, one outside and one inside, holding hands as they jump in and out.
4. Give instructions to children holding bean bags (for example, hold up your bean bag, put down your bean bag, put it on top of your head, put it at the back of your right leg, put it on your left ear, close your eyes and put the bean bag under your chin).

5. Give instructions to children holding hoops (for example, put the hoop above your head as far as you can, put the hoop level with your shoulders, waist, tummy, knees, eyes, ears). Later the instructions may be quite advanced (for example, put the hoop level halfway down your thighs, close your eyes and put the hoop level with your chest).
6. Give instructions to children with chairs (for example, stand behind, in front of, at the side of your chair, crawl under the chair from the front to the back, then sit at the back, walk on your knees from the back to the front).
7. Repeat the types of exercises in 5 and 6 using a variety of shapes in different colors and sizes. Encourage the child to say, "I am standing on a big square, I am kneeling in front of a little yellow circle," etc. Ask the child to walk, jump, crawl, hop around the shapes.

In activities 1 through 4 the work should start with the child in a static position, such as sitting, kneeling, standing, lying prone or supine. Exploration of personal space progresses to an area within a radius of approximately 36". Later the child needs activities to encourage movement and exploration of wider environmental space.

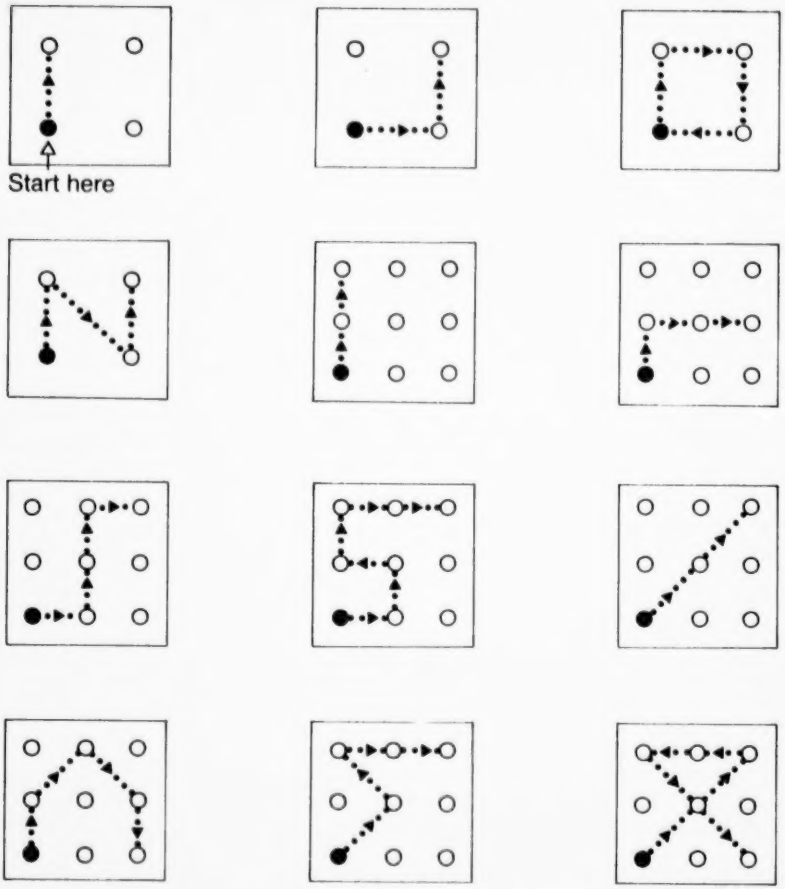
Activities to Explore Space and Teach Awareness of Spatial Relationships and Orientation

The gross motor activities of walking, running, skipping, hopping, jumping, and body coordinate work will lead to exploration of space and teach the child to appreciate differences in orientation and direction. However, activities especially designed to develop directionality (the appreciation of coordinates in extra-self space) and awareness of spatial relationships are also required.

Some important visual perception skills are based on visual-motor activity and coordination. The child has to learn to control and coordinate movements in relation to visual information. Awareness of relationships between objects in space and the child's orientation regarding them is necessary in order to develop ideas of perspective and time-space relationships.

The following activities are suggested:

1. Visual-motor integration activities using visual patterns to be copied by movement. Cards such as the examples on the following page are prepared and, using circles or other shapes on the floor, the child walks the patterns, first using the cards and then from memory. Teachers should program the cards to suit the children.



2. Activities similar to the above, but presented orally (for example, "Start here, move two circles forward, then two across and finish on the middle circle." This also trains listening skills and auditory memory and sequencing.)
3. Activities necessitating moving to different parts of the room, sides, corners, middle, top corner of wallbars, halfway up the wallbars or rope
4. Moving at different speeds, and with changes of speed at a given signal
5. Throwing objects (for example, bean bag, ball) at a target (drawn on floor or wall, or at moving targets, such as another child running)

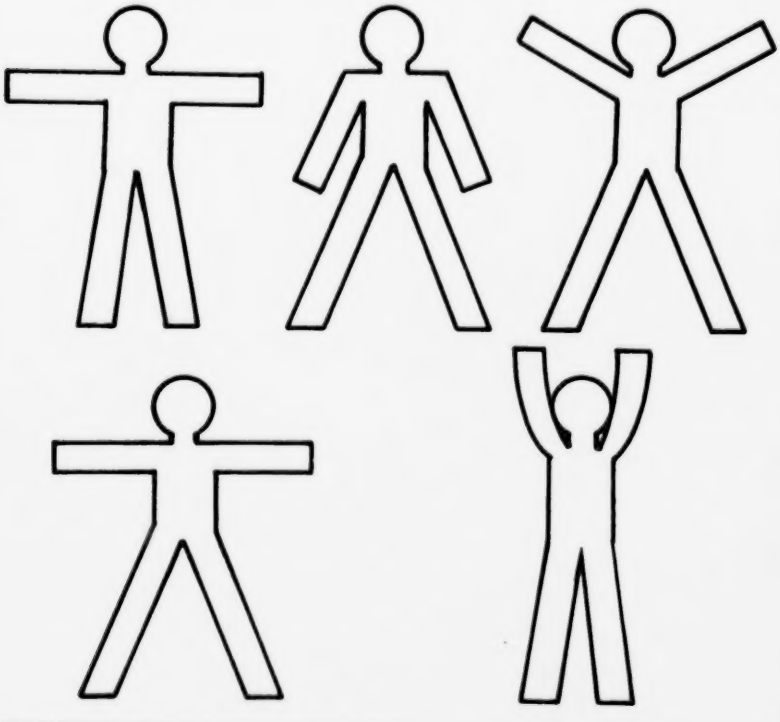
6. Obstacle courses of increasing length and complexity, involving walking, crawling, bending, stepping over/under, squeezing through, etc. (For example, moving between chairs placed closer and closer together until only a sideways movement can be used, stepping over canes at different heights, stepping under and between canes, moving between and around shapes or objects without touching them. The shapes or objects are gradually placed closer together.)
7. Changing direction and type of movement on a signal
8. Running, hopping, etc. behind a partner without touching, and copying partner's movements and changes of movement, direction, and speed
9. Litter the floor with numerous objects of various sizes and the children then walk, run, hop, etc. between the objects, without touching them, and without colliding.
10. Two children face each other from a distance, run toward each other at speed, avoiding collision at the last moment. This, of course, needs good supervision and might be preceded by running to stop at a given target.
11. The children stand still, and at a signal turn their heads quickly to look at any spot or object in the room. On another signal, they walk (or run, etc.) directly to the spot or object.
12. If possible, repeat activity 11 with eyes closed without colliding with others. (This is useful with small groups of children requiring remedial help.)
13. Solving problems involving movement. (For example, "How many ways can you move from this circle to the square over there?" "How many ways can you move up and down the sloping bench?" "How many hops will it take to get from the door to the pile of mats?")
14. Miming actions such as passing imaginary objects down the line, pushing and pulling, backing against a strong wind, ducking to avoid imaginary flying objects or birds, crawling through the jungle, cutting a way through the undergrowth, imaginary sword fights, groping around in a dark room
15. Playing games such as "Here we go round the Mulberry bush," "Simon Says," and "Hokey-Pokey," statues

Practicing Body Movements

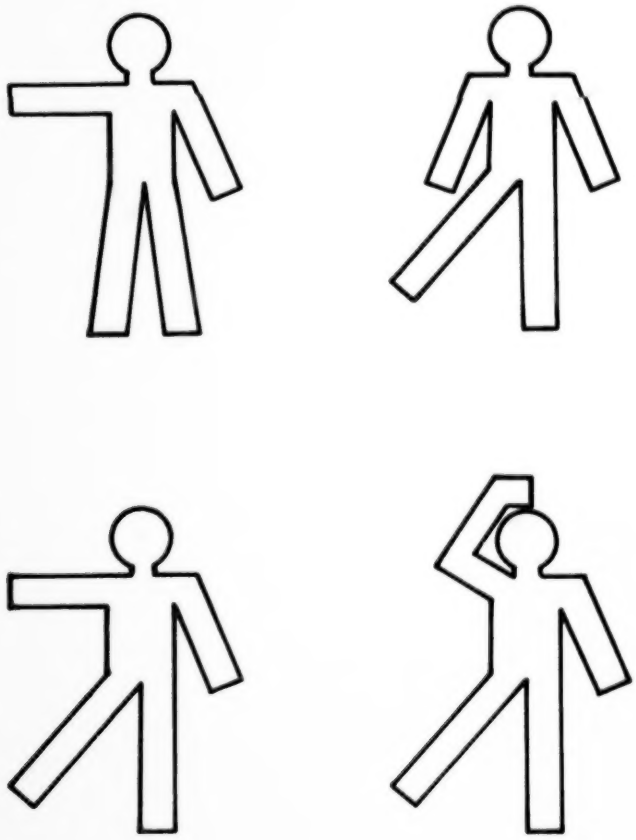
Imitating body movements

Children copy a position or movement demonstrated by teacher or another child. This develops muscular control and the ability to turn visual input into motor output.

Bilateral movement should be copied first. Visual memory and sequencing may be trained at the same time by asking the child to copy two, three, or four bilateral movements in sequence.



Bilateral movements



Unilateral movements

Copying unilateral movements should follow bilateral movements. In further visual training, use combinations of bilateral and unilateral positions as in the sequences on the following page.

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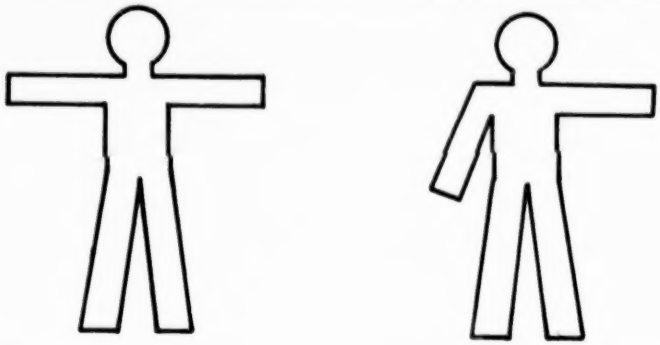
1



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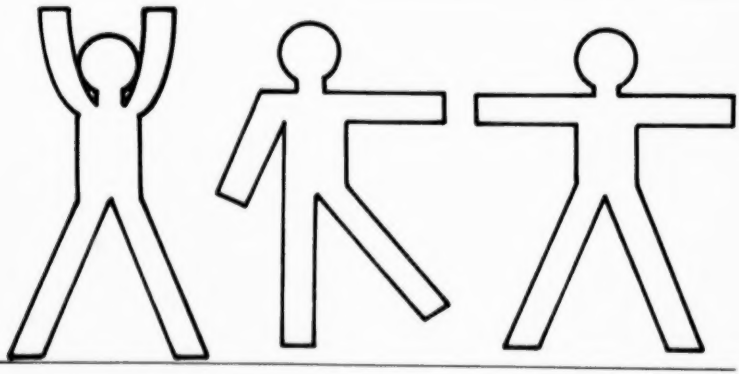

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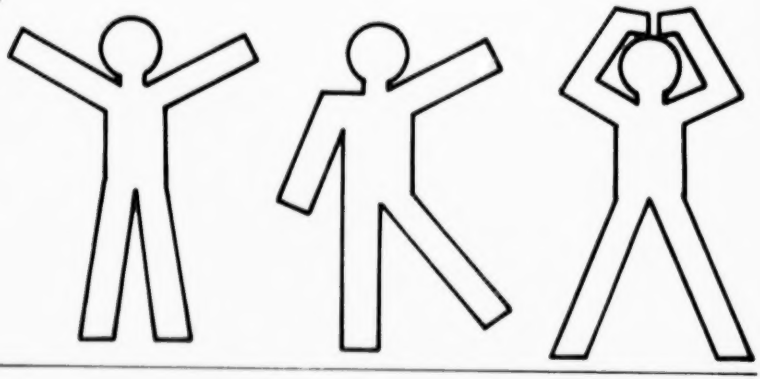
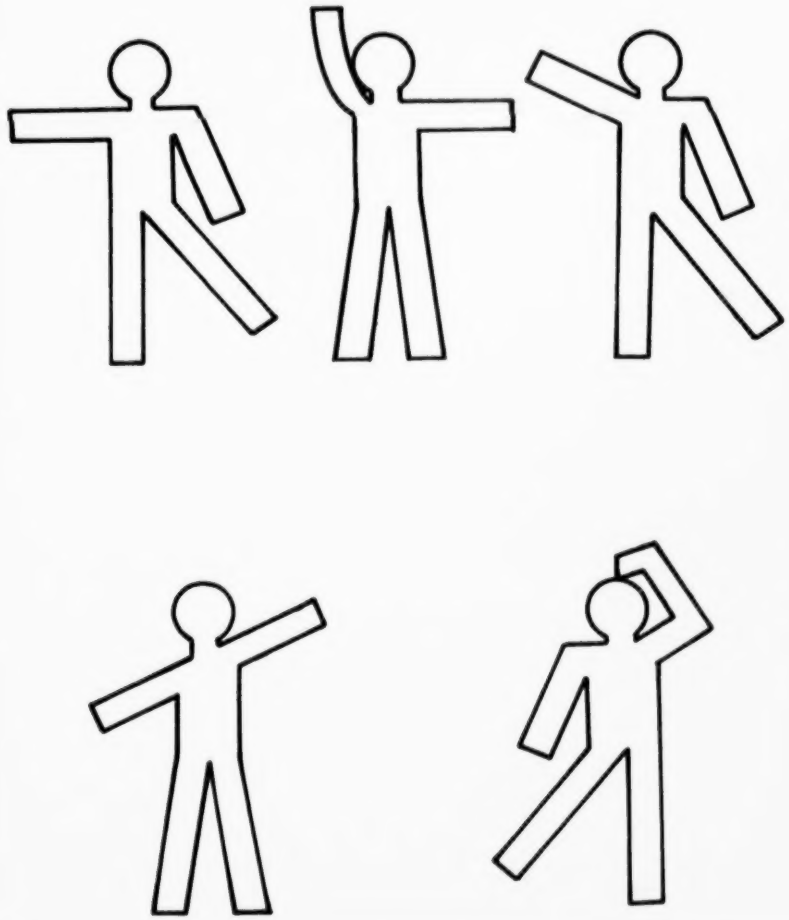




Contralateral movements

After bilateral and unilateral positions have been practiced, contralateral movements should be introduced.

Visual memory and sequencing training can now make use of all three types of position.

When demonstrating a position or movement, the teacher should:

1. demonstrate when turned away from the children (that is, the children produce identical positions).
2. demonstrate when facing the children. The children will at first tend to mirror the positions, and in five- and six-year-olds or delayed children this is acceptable provided it is consistent.
3. demonstrate when facing the children, and encourage them to produce identical positions. At this stage responses should be prompt and positive.

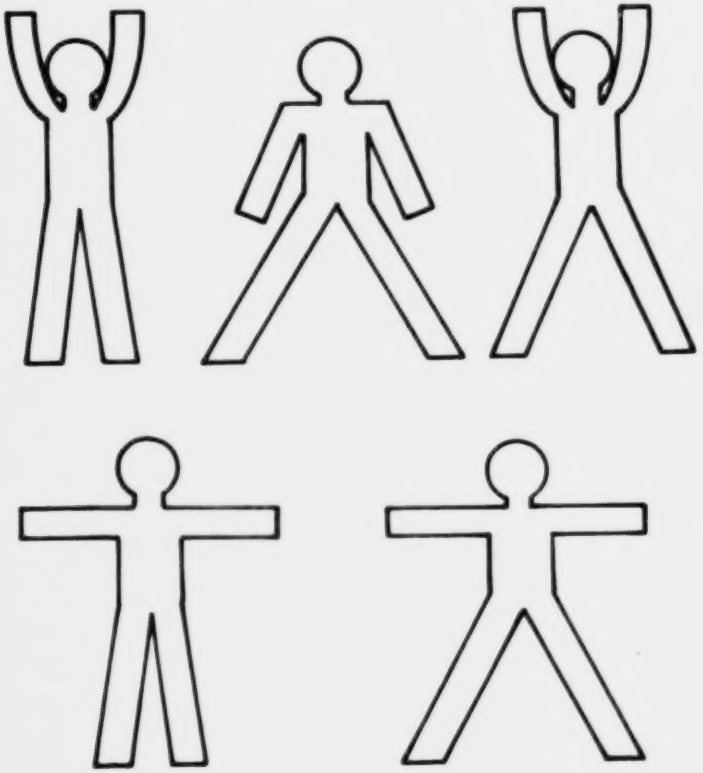
Copying movements, as well as static positions, is also important, and should be included in programs.

The copying of movement can also be taught by programmed sets of stick drawings. Stick or pipe cleaner figures, and cut-out body shapes on an overhead projector can also be used for children to copy. The overhead projector is particularly useful for visual memory training: a position, or series of positions, is shown for five to ten seconds and the children respond from memory.

Responding to verbal instructions

This is usually more difficult than copying visual demonstrations, and much more practice and slower programming may be necessary. However, the auditory approach is important because it helps to hasten listening, memory, and sequencing skills which are vital (for example, in the phonic area of reading).

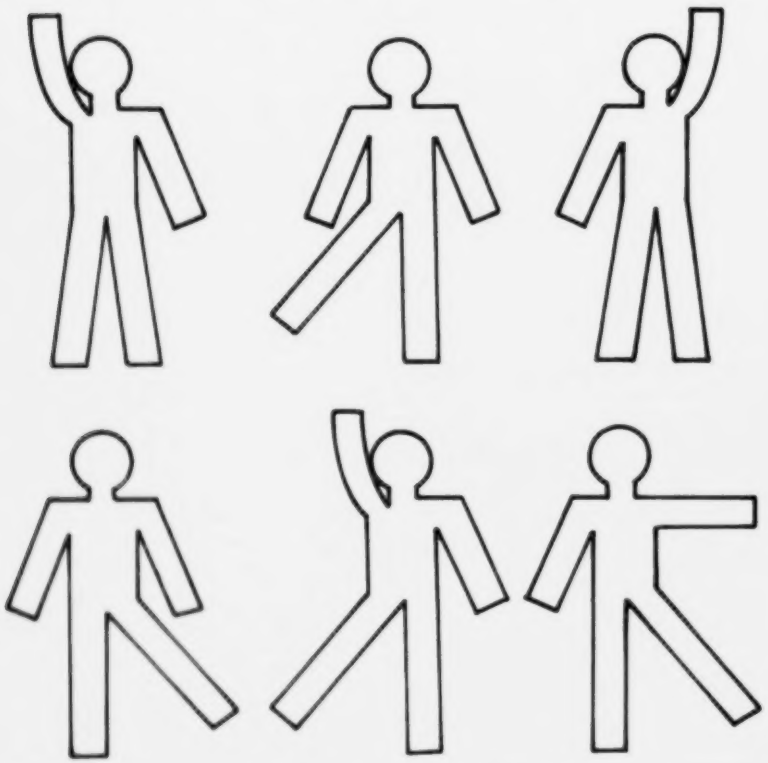
The programming is similar to that in imitating body movements. The activity known as "Angels in the Snow" is particularly popular for this type of training. The child lies flat on the back with arms at the side and feet together. All movements of arms and legs are made keeping contact with the floor to provide kinesthetic/tactile feedback. This activity may be used by a class working from the teacher's instructions, but children can work in pairs, at first using teacher-made programs, such as those illustrated on the following pages.



Bilateral instructions

1. Move both arms above head keeping arms on the floor.
2. Move both legs sideways.
3. Move both arms above head and both legs sideways.
4. Move both arms straight out at sides.
5. Move both arms straight out at sides and both legs sideways.

27



Unilateral instructions

1. Move the arm near the window above head.
2. Move the leg near the window sideways.
3. Move the arm near the wallbars above head.
4. Move the leg near the wallbars sideways.
5. Move the arm near the window above head and the leg near the window sideways.
6. Move the arm near the wallbars straight out and the leg near the wallbars sideways.

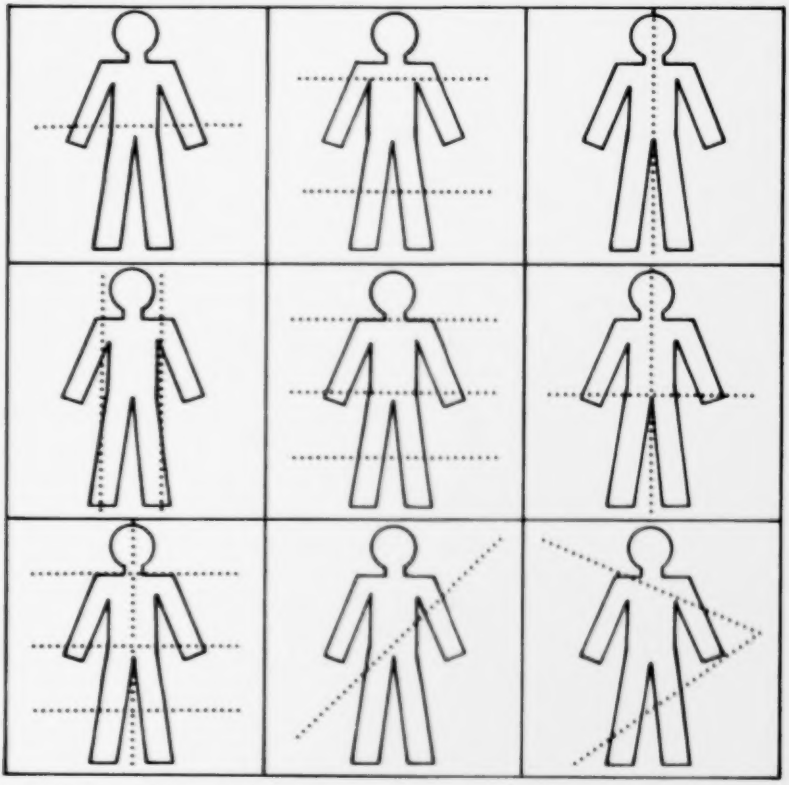
Contralateral instructions
The instructions will be similar to those on the previous pages. Later in the program the terms right and left should be used. (See section on Laterality and Cerebral Dominance.)

The children's movements should become smooth, prompt, and fully-extended, with no associated, unwanted movements across the body. Teachers should look for signs of failure in motor inhibition and, if circumstances permit, restrain unnecessary movement or ask the child to do so.

The program should be repeated in the prone position, and lying on a box with limbs unsupported, to remove tactile feedback.

Classroom Activities to Supplement the Gross Motor and Body Awareness Work

1. Playing with a programmed set of body jigsaws. The children should be encouraged to describe what they are doing using the appropriate language (that is, top, bottom, middle, side, parts of the body, etc.).



2. Playing with face jigsaws
3. Playing with dolls or action figures
4. Making figures with Play-Dough, Silly-Putty, clay, pipe cleaners
5. Cutting out pictures of people
6. Making figures out of preformed shapes cut out of cardboard, wood, or felt
7. Tracing around bodies, hands and feet, cutting out, and coloring
8. Finger painting, drawing in sand
9. Singing games with body movements

FINE MOTOR ACTIVITIES

Refer to the section on training hand-eye coordination in A. E. Tansley, *Perceptual Training.*

These activities are designed to improve fine finger movements and finger dexterity and are particularly useful as prewriting training.

1. Finger games and exercises, to music where possible (the following sources are available from Constructive Playthings):
   Rhymes for Learning Times, by Louise Binder Scott
   Finger Frolics—Fingerplays for Young Children, by Liz Cromwell and Dixie Hibner
2. Hand exercises, such as closing the fingers to the palm and stretching to rhythm, touching the tip of each finger separately to the tip of the thumb, first one hand, then the other, and then both hands together, closing fingers smoothly starting with little fingers, placing the palm flat on a hard surface and raising fingers singly, first one hand, and then both together
3. Building towers and simple structures with large cubes at first, then smaller cubes
4. Finger painting
5. Hand and finger puppetry
6. Threading beads, lacing shoes, tying laces
7. Sorting objects of different sizes and shapes
8. Screwing nuts and bolts
9. Playing with construction kits (for example, Tinker Toys, Lego)
10. Clay or play-dough modeling
11. Fastening buttons
12. Cutting out, starting with straight lines and moving on to curved lines of increasing difficulty
13. Counting with one-to-one correspondence
14. Playing simple musical instruments
15. Hand-eye coordination exercises
16. Weaving and knitting
17. Drawing around templates of different shapes and sizes
18. Coloring shapes and pictures
19. Paper folding, sculpture, patterns, mosaics
20. Water, sand, and doll play

21. Games involving throwing dice and moving small objects
22. Wiggling fingers in front, behind, and at the side
23. Making shapes with hands and fingers
24. Dancing with the hands

The following additional suggestions might also be helpful to teachers in organizing motor education programs for gross motor and body awareness development.

Whole Body Activities

1. Lying down and rolling over to right and left (rolling over to the dominant side is important)
2. Walking forward and backward on hands and feet or holding calves
3. Walking with side steps, feet closing up, and later with legs crossing in front and behind
4. Creeping and crawling
5. Walking with legs swinging forward and backward
6. Marching at various speeds
7. Making body as tall and short, or as fat and thin, as possible
8. Sitting with feet together and then standing and returning to sitting position; repeat with legs crossed
9. Jumping up from a crouching position and then crouching down again
10. Knees bent, hands on knees and knee springing; stand up and repeat
11. Trampoline work
12. Climbing exercises with ropes, wallbars, climbing frames, etc.
13. Bouncing on a large ball and rolling forward and backward on a ball or cylinder

Activities to Improve Body Awareness

Some of these activities can be performed to rhythm.

Head

1. Head turning and rolling
2. With eyes closed, touching eyes, ears, nose, hair, eyebrows, with alternate hands and both hands together

3. With eyes closed, turning the head in the direction of a given sound or toward object whose position is already known

Trunk

1. Body turning with arms swinging loosely or with arms sideways or forward
2. Arms above head, trunk bending to left and right, forward, and upright

Arms

1. Arms circling forward and backward
2. Copying arm positions (see page 16)
3. With arms outstretched, circling the arms with small or large movements
4. Various arm swings to rhythms
5. Arms sideways or forward, placing hands on waist
6. With arms outstretched, folding the arms and then stretching them again
7. Pulling and pushing, working in pairs

Fingers

1. Closing hands
2. Wiggling fingers
3. Moving individual fingers to rhythms
4. A variety of movements using both hands together and then alternate hands

Legs

1. Lying on floor, raising legs, both together and then alternate legs, quickly and slowly
2. Angels in the Snow, moving legs sideways
3. Lying on the floor, circling one leg in the air making small circles to big ones and back again
4. Standing, swinging alternate legs forward and backward, sideways and back
5. Bending and stretching knees with hands on thighs
6. Standing on one leg and moving the heel of the other foot down the shin from knee to ankle
7. Sitting on a bench, stretching and bending the legs, and raising and lowering them

8. High kicking to touch outstretched hands
9. Jumping, hopping
10. Jumping with alternate leg swinging

Feet and Toes

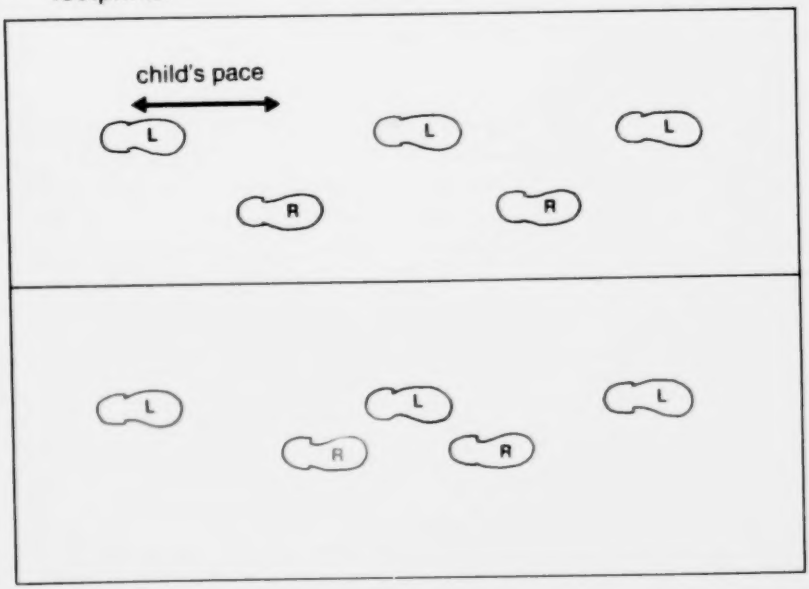
1. Raising and lowering the heels
2. Raising and lowering the toes
3. Walking on toes and heels
4. Walking on the toes of one foot and the heel of the other
5. Walking on the outside edges of the feet, keeping the arms still to the sides
6. Jumping, feet together, feet apart, and then alternately
7. Bending the trunk to grasp the ankles
8. Pointing the foot or big toe at a given target, while lying on back or standing
9. Picking up a bean bag with the toes

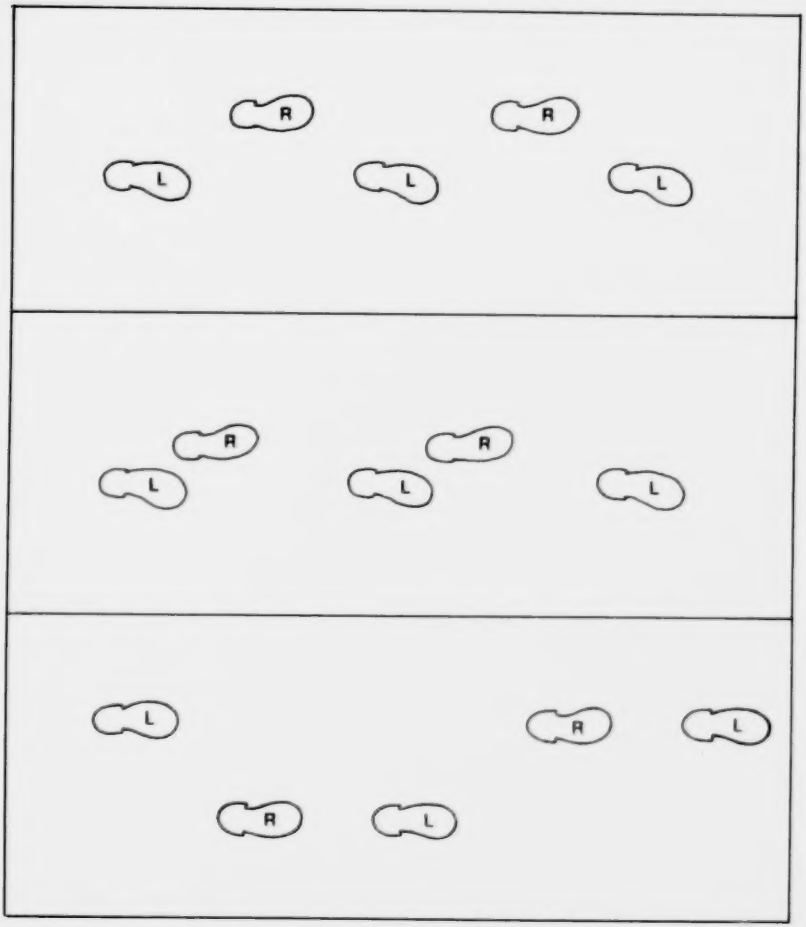
Balance Activities

All balance activities contribute to the development of large muscle control, laterality (knowledge of sidedness), body awareness, and feelings of confidence, by helping the child coordinate right and left sides. Balance activities should be included in every movement lesson. The following activities, listed according to degree of difficulty, have been found useful in motor education programs. Children should enter the programs at the appropriate place. Children's balancing skill can often be masked by lack of confidence. Assistance should be given at first, as well as much encouragement and praise, by the teacher or partner.

1. Walking between two lines about 12" apart, forward, backward, and sideways—gradually bringing the lines together until they are a foot's width apart
2. Heel-to-toe walking between the lines as above
3. Walking on a wide bench or plank of wood
4. Walking on shapes separated at appropriate distances to encourage long and short steps
5. Walking up and down steps and sloping surfaces
6. Standing on toes and heels alternately
7. Standing on one leg, swinging the other or drawing shapes with the foot on the ground and in the air

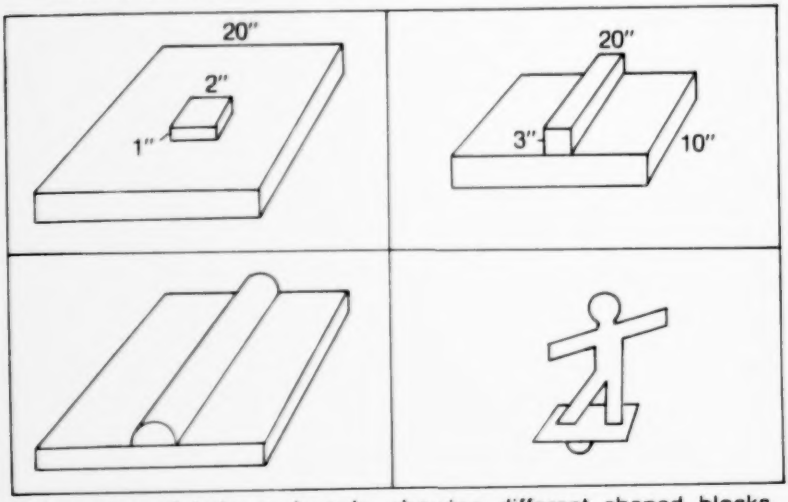
8. Running in various directions and stopping on one leg or as a statue
9. Dipping a toe or heel in a pool (hoop), then shaking the foot dry
10. Jumping and landing with feet together
11. Jumping to turn in different directions
12. Standing on one foot and picking up a bean bag
13. Standing on one leg, holding the foot behind with the opposite hand
14. Hopping on the spot or forward and backward
15. Threading the needle: clasp hands in front and step through the ring and back again
16. Using a program of footprints: These can be made on rolls of black paper, which are easily laid out on the floor. It is useful to have red footprints for right feet and yellow ones for left feet. Children still uncertain of left and right should have a red band around the right ankle and a yellow one round the left. They should be encouraged to say *right* and *left* while stepping on the footprints.





17. Moving through angles and curves: For this, it is better to have separate footsteps, either marked on the floor or placed appropriately. A variation of this activity is pretending to walk on stepping-stones to cross a river.
18. Walking along a line (for example, strips of tape or paper placed on the floor)
19. Walking along a straight piece of rope, then curved ropes and ropes made into shapes (for example, circles, triangles, diamonds)
20. As above, but walking heel to toe

21. Walking between rungs of a ladder placed on floor and then along the sides of the ladder with feet apart, forward and backward
22. Walking along narrow planks (for example, approximately 5" wide and 2½" thick) forward, backward, sideways, right to left, and left to right
23. Walking along a balance beam, balancing on one leg then the other
24. Sitting, kneeling, or standing, with eyes open or shut, on various sizes of balance board, as recommended by Kephart (1971)



Examples of balance boards, showing different shaped blocks attached to the underside.

Balance boards are made from pieces of wood, 12"-20" square, with a block of wood attached to the underside. This piece may be rounded or square, and of different thicknesses and shapes, to increase the difficulty of balancing. A roller board can also be made, using a square and a cylinder of wood.

25. Catching or bouncing balls, or doing exercises, while on a balance board

Further balance activities

1. Riding large, bouncing rubber balls
2. Playing on plastic inflatables or mattresses
3. Pogo sticks and stilts

4. Scooters and cycles
5. Using large innertubes, walking around with one foot on and one off, jumping in and out, etc.
6. Sitting on, kneeling on, and straddling large barrels
7. Crouching or lying inside a rolling barrel
8. Balancing on small barrels, under good supervision
9. Skate boarding, supervised with young children
10. Obstacle races with a course made up of balancing activities (for example, walking between and on lines, on footprints, along planks, across mattresses and between chairs using forward, backward, and sideways movements)

RHYTHM TRAINING

Experience suggests that training in rhythm is essential for building up the basic learning skills, and an awareness of auditory rhythm is important in learning to read by a phonic approach.

Children seem to benefit from rhythm training in the following ways:

1. Improved listening skills
2. Improved auditory memory and sequencing and temporal sequencing
3. Improved integration of auditory, vocal, and motor activity
4. A reduction in restlessness and improved concentration
5. A hastening of the acquisition of skills required for phonics
6. Improved self-confidence

Regular Rhythms

1. Sitting on the floor and tapping with both hands on the floor, repeating rhythms of regular beats given by the teacher, first tapping on the floor and then using a drum or tambourine (auditory-vocal-motor association is an important basic learning skill and the children should count as they tap, 1-2, 1-2, 1-2, or 1-2-3, 1-2-3, or 1-2-3-4, 1-2-3-4, etc.)
2. Marching, jumping, skipping, and hopping to regular rhythmic beats
3. Accentuating given numbers, introducing stresses into the rhythms (for example, heavy, light, or loud, loud, soft, etc.)

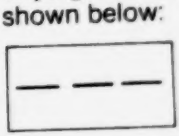
4. Still sitting on the floor, repeating the above rhythmic work tapping with one hand (the child will usually use the dominant hand first) and then the other. Variations in speed should also be introduced, but the rhythms kept regular (that is, beats of the same length).
5. Tapping the rhythms with both hands, or one hand, on the head, knees, thighs, chest, feet, ankles, etc. and stamping out the rhythms with the feet, or tapping on the thigh while standing on the other leg. This early rhythmic work is related to body awareness training.
6. Drumming five-beat rhythms on the floor or table, counting at the same time, using fine finger movements
7. Repeating regular rhythms with the shoulders, eye-blinking, shaking the wrists, and so on. This is great fun and enjoyed by young children. A rhythm can be given and the children select which part (or parts working together) they want to use; rhythmic sequences can also be repeated. After verbal instruction, the children keep in time with given rhythms and say and touch (for example, knee, knee, knee, head, head, head). This can be made more difficult by saying and touching while marking time, walking, jumping, or hopping. The tempo should also be varied.

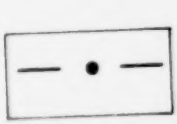
The above activities are important for developing a feeling of rhythm throughout children's bodies. The activities should be performed later by auditory stimulation alone (that is, with the teacher giving the rhythms while out of sight).

Irregular Rhythms

These rhythms should be introduced after regular rhythms, using first bilateral and then unilateral actions, as before.

1. Responding to rhythms involving combinations of long and short beats, sing "dah" for long and "di" for short beats in time with tapping, clapping, or moving to the rhythm patterns
2. Reproducing visual rhythms by voice and movement (for example, the teacher shows a rhythm by closing the hand to a rhythmic pattern, with no sound made, and asks the children to say and tap the rhythm)
3. Saying and clapping visual rhythms from programmed cards, as shown below:





The cards may also be shown and then the children asked to reproduce the rhythms from memory.

4. As with regular rhythms, these irregular beats are made more complicated and interesting by introducing stresses and variations in speed. Again, children should be encouraged to use the language involved, long-long-short, heavy-light-light-heavy, while tapping, walking, or jumping to the beats. Regular and irregular rhythms can be used to encourage contralateral responses (that is, using alternate sides of the body).
5. Tapping regular rhythms R-L-R-L-R-L, R-R-L-L-R-R-L-L-R-R-R-L-L-L, etc. with alternate hands on floor or thighs, with alternate feet stamping, and alternate hand and foot (for example, right hand tapping on thigh and left foot stamping). This promotes further body awareness and sidedness training. Counting with one-to-one correspondence should be encouraged.
6. Tapping irregular rhythms with contralateral actions (for example, R = dah, L-L = di di, etc.).
7. Moving to irregular rhythms, stepping forward, backward, and sideways (for example, right = long, left = short, right = short, left = long, and combining heavy and light beats)

For children who have difficulty with these more complicated rhythms, continue to let them see the rhythms, so that visual input will assist transfer to auditory/motor association. With children who have learning disability in this area of development (some so-called dyslexic children are very deficient in rhythm, auditory/vocal/motor association, auditory memory and sequencing), actual physical help is needed in the early stages, even with simple, regular rhythms.

Activities for Further Rhythm Training

1. Moving and dancing to music
2. Beating time to music with a strong rhythmic content
3. Guessing nursery rhymes and well-known tunes from a rhythm clapped or beaten on a tambourine
4. Guessing names of songs from their clapped rhythms
5. Singing and rhythmic games
6. Tapping rhythms on children's backs, then asking the children to repeat by clapping, stamping, saying, etc. This can be introduced as a game: one child taps a rhythm on another child's back who claps the rhythm, and then taps the same or a different rhythm on a third child's back, and so on.

7. Using percussion instruments
8. Hopscotch
9. Finger painting to rhythms to demonstrate the relationship between auditory and visual rhythm
10. Hand-eye coordination activities to musical or tapped rhythms (for example, drawing circles, squares, etc. to rhythm, writing letters to rhythms, rhythmic finger play, squeezing a rubber ball to rhythm)
11. Choral verse speaking

Much of this rhythm work can, of course, be part of regular classroom activities. A metronome can be used to help rhythm development, with children writing individual letters or actually reading in time to metronome beats of varying speeds. There are dangers in overdoing this, since the rhythm of reading and speaking with stresses, pauses, and good phrasing, might be retarded. However, in the very early stages of writing and reading it is undoubtedly helpful to some children.

LATERALITY AND CEREBRAL DOMINANCE

Laterality

Laterality is the internalized appreciation of sidedness, and is important in motor and perceptual development. It appears to be necessary for the acquisition of balance and equilibrium about the vertical midline, and good body posture. By school age most children have already reached a stage when, through play and gross movement activity, they know about right and left and the two sides of the body. There are many children with learning problems who need specific help in laterality training and the recognition of right and left if such symptoms as reversals, confused ordering of words, and mirror writing are to be prevented or eradicated. Without this help they have problems not only in body awareness, but in spatial relationships (that is, in understanding the meaning of right and left out in space and appreciating the spatial relationship between their static or moving body and people and objects in the environment). In other words, without a good feeling of laterality within, they have great difficulty in projecting their internalized feelings of sidedness to extra-self space. The externalizing of laterality is called directionality, and poor laterality and directionality may delay children's awareness of left-right and right-left movements, space-time relationships, visual and auditory sequencing, and temporal order. (See Tansley 1986.)

Many of the suggested activities in the other programs will be of great help in laterality and directionality training. Activities such as crawling, creeping, standing, walking, and running with good posture, jumping, and skipping, all balance and rhythm work are valuable, particularly if forward, backward, and sideways movement are stressed. The following specific exercises and suggestions should be used to supplement the more general activities.

1. "Simon Says," with emphasis on using right and left hand, arm, foot, or leg
2. Action games involving left- and right-sided movement (for example, "Hokey-Pokey")
3. Any hand-eye or foot-eye activities directed by the teacher (for example, patting, bouncing, catching, kicking, or dribbling a ball, stepping on, in, or over things, pushing a bean bag forward or sideways with alternate feet, throwing at targets).
4. Footsteps (see Balance Activities, pages 29-30)
5. Marking the right or left hand at the beginning of each day
6. Putting a weighted band on the right or left wrist
7. Activities involving turning to the right and left (for example, jumping quarter turns to the left and right, putting one arm out sideways and then turning to face that direction saying, "I am turning to the right," following a planned circuit which includes instructions to turn right or left, responding to instructions such as "With eyes closed, walk forward four paces, turn right and walk three paces.")

In classroom activities, the aim should be to help children reach a stage of automatic awareness of right and left.

Perceptual Training (Tansley 1986) has further work on ocular pursuit training, grid work with reference to position on page, hand-eye coordination exercises as a prewriting activity, visual, auditory, and temporal sequencing with left-to-right orientation.

Cerebral Dominance

The role and importance of cerebral dominance in the growth of effective learning skills is still controversial. The author's experience leads to the conclusion that children who between six and eight years of age have not achieved unequivocal dominance of one side as observed in the hand and foot are much more likely to experience learning difficulties in basic subjects. In addition, there does appear to be a close relationship between speech and language problems and lack of cerebral dominance, or mixed dominance of hand and

foot. It is necessary here to distinguish between mixed dominance and cross laterality where the dominant hand and eye are opposed. The author is far from convinced about the importance of the latter as a cause of reading failure. Using teacher audiences to demonstrate the detection of cross-laterality, it has been found that a quarter to one-third of teachers may be affected. Mixed dominance of hand and foot is of more concern, and is therefore discussed in relation to motor education.

Observing Dominance

Teachers should pay particular attention to children's preferences of hand and foot when they are free to choose. The following activities often reveal these preferences.

Hand

1. "Put up your hand!"
2. Clapping: Which hand does the clapping?
3. Catching with one hand
4. Bouncing and patting a ball
5. Painting, coloring, writing
6. Miming brushing teeth, combing hair, etc.
7. Dressing
8. Opening a door
9. Hammering, sawing, digging
10. Tapping rhythms with one hand

Foot

1. Kicking a ball rolled straight to the child
2. Pushing a ball around bowling pins: Which foot has the better control?
3. Running to stamp on a target some distance away
4. Hopping
5. Balancing on one leg

Other indications of side preference are:

1. When asked to roll over the child will tend to roll to the dominant side.
2. When asked to jump and make a quarter turn the child will usually turn to the preferred side. On a trampoline, too, the child will usually make turns to the dominant side.

3. When asked to step sideways, say, out of a hoop, or to stand or sit at the side of an object, the child will go toward the dominant side.

If preference for one side is consistently shown in all these activities, the teacher should encourage the child to use that side until dominance is thoroughly established and reading skills have been mastered. When definite preference is not revealed, as a general rule, it is advisable to take more notice of the foot preference in six-year-olds.

The difficulty arises when an unequivocal preference is shown for one foot and leg which is opposite to the hand being used in writing, painting, etc. Should the child's handedness be changed? This is a difficult decision to make, particularly with older children. The author has changed the hand with some children, but only after the following considerations have been very carefully weighed.

1. All concerned, including the parents and the child, must agree with the change and consistently carry it out.
2. The child must not be emotionally disturbed.
3. If the child is happy and reveals no problems in reading and writing, then it is perhaps advisable to leave well enough alone.
4. There is the possibility of a temporary speech stammer.
5. Foot preference has been clearly demonstrated over a period of time, using the following procedure several times.
   a. Place a ball directly in front of the child at one or two yards distance. Ask the child to run and kick the ball. Repeat with the other foot and observe which foot gives the stronger and straighter kick.
   b. Roll the ball directly to the child (not to one side), and again find which foot gives the better kick.
   c. Put six bowling pins in a straight line one yard apart and ask the child to push a ball around the pins with a foot.
   d. Put an object on the floor at a distance and ask the child to run and stamp on it.

The following points are particularly useful to bear in mind when dealing with children who appear to be left-handed.

1. Whether the child is right or left dominant, good left-to-right hand and eye movements will need to be established for success in reading and writing, but left-handed children are more prone to reversals and therefore need extra help in this.
2. Young left-handed children are likely to be slower in speech development, with often up to a two-year lag.

3. The left-handed child should sit in such a position that his handedness does not interfere with the dominant hand of any child sitting near him.
4. To avoid the right-to-left tendency in left-handers a cue (for example, green marginal line or dot on each line—green for go) on the left side of the page is helpful.
5. The left-handed child often feels different from peers. This is particularly so if attention is drawn to handedness difficulties or parents have been overanxious about what appears to be slower development. Parents who are left-handed themselves and have had difficulties are more liable to anxiety about their left-handed children. There is some evidence to suggest that left-handed fathers who write with their right hand are likely to have children, particularly sons, who are prone to reading problems.
6. Left-handed children are more likely to "invent" methods of writing to suit themselves (for example, hooking the pen away from the paper in order to see what they are doing). With the paper vertically in front of them or tilted to the left as for right-handers, their writing hand will cover part of the words, thus precipitating spelling and reading difficulties. They should have the page tilted to the right and be encouraged to hold the pen or pencil correctly, pointing over the left shoulder.

HAND-EYE AND FOOT-EYE COORDINATION

Many of the activities previously mentioned in these motor programs will help to develop hand-eye and foot-eye coordination and need not be stressed again. The following activities may be of additional use.

1. Throwing a bean bag into a target of circles of varying radii with appropriate scores and then throwing from increasing distances
2. Throwing a bean bag into a large bucket, a big can, and a small can
3. Throwing a bean bag over a chair or horizontal canes at different heights into a target area
4. Bowling games
5. Ball games involving throwing and catching, throwing the ball forward or upward and catching it before it lands, throwing games with a partner, etc.
6. Kicking and dribbling different sized balls
7. Jumping over ropes or into and out of hoops

8. Drawing shapes on the floor with the foot

For hand-eye coordination work with particular reference to classroom and prewriting activities see Tansley (1986).

MOTOR ACTIVITIES FOR TRAINING IN VISUAL AND AUDITORY PERCEPTION

These activities are included in the motor programs because not only are they necessary for children, but they illustrate how the development programs are interrelated and interdependent. They are part of an approach which gives opportunities for children to acquire the basic skills of learning in as many varied ways as possible, but using different emphases at different times. For example, an ability to recognize and reproduce basic shapes appears to be essential as a prerequisite for a "look and say" approach to reading, and for writing and spelling. The acquisition of this ability can be hastened by using a movement approach. If this can be extended to involve classification according to color and size and the use of language for this purpose, then the motor programs will also be helping children to think.

Important though recognition and reproduction of forms is in learning, the development of memory for visual and auditory material is essential. As suggested earlier, motor activity should be used as a medium to assist perception of forms and for training in visual and auditory memory and sequencing. A program to achieve these objectives would include the following activities.

1. Children making circles with their bodies
2. Holding hands in a circle
3. Crawling, walking, hopping around a big circle, in a clockwise and counterclockwise direction
4. Standing in, on, or outside circles of various sizes from very large to very small
5. Selecting circles of different colors and sizes. By this time children should be able to spontaneously say, "I am standing in a big, yellow circle," etc.

   These activities should be repeated for squares, rectangles, triangles, and diamonds.

Visual sequencing and memory can be developed by giving children a programmed set of cards with increasingly difficult sequences of colored shapes for them to walk to in sequence and from memory.

Auditory memory and sequencing can be trained by giving children increasingly difficult instructions to remember in sequence and follow. For example, "Stand in a big blue square, then walk to a middle-sized red circle, and then run to a small green triangle and sit on it."

These activities should also be used to teach the language of form (for example, round, straight, long, short, curved, angles, sloping), thus helping the true perception and visualization of the shapes. If these activities are paralleled by those in the classroom (for example, cutting out, tracing, coloring, free drawing, pattern work), the children's form perception and memory should develop quickly, and certainly more quickly than if left to mature without this comprehensive and structured intervention.

Motor education is, therefore, a vital part of the curriculum, not only for the physical well-being which it brings, but because of its role in the total development of the child and in the acquisition of the important basic skills.

MIME AND DRAMA

Mime and dramatic activities can be used to further develop a total awareness of self, and, in particular, of the emotions. Work with emotionally disturbed children has emphasized the need for letting children experience feelings of rigidity and complete relaxation, but the development of these educational programs has also highlighted the great importance of this in helping all young children.

Suggestions for Rigidity and Relaxation Work

Gradual Relaxation
Teachers should test the degree of relaxation in the children by lifting arms, hands, or legs.

1. Snowman gradually melting under the sun
2. Wooden soldiers becoming floppy clowns
3. Balloon gradually deflating
4. Puppets on strings which are cut one by one making them gradually become all loose and floppy
5. A flower withering in hot sun
6. Candle slowly burning into a pool of wax
7. Falling asleep to music or tambourine beats becoming softer

8. Stretching up to pick a magic fruit—one bite casts a spell and the child goes slowly down to fall asleep
9. Stretching and relaxing fingers, toes, arms, legs

Sudden Relaxation

1. Blown-up balloons which are suddenly burst
2. Being shot
3. A tightly coiled spring which suddenly breaks and uncoils quickly

Rigidity

1. Playing statues—children move about freely and on a given signal "freeze" into completely rigid statues. They may need to be taught how to make their bodies extremely taut, starting with the toes, knees, thighs, waist, and so on up to the head (good also for body parts training). This is better done on the floor initially.
2. A seed growing into a strong rigid plant
3. An icicle forming
4. A balloon being blown up
5. Stiffening with fright in imaginary dramatic situations
6. Stretching imaginary elastic between different parts of the body

Suggested Activities for Mime and Drama

Feelings and Sensations

Hot/cold

1. Eating hot french fries or very cold ice cream
2. Stepping into a lovely warm bath or ice-cold ocean
3. Creeping through a hot, steamy jungle
4. Pulling a sled in snow

Comfortable/uncomfortable

1. Soft grass or prickly weeds
2. Walking in comfortable slippers or badly fitting shoes
3. A soft or a hard, lumpy bed
4. Walking on different surfaces in bare feet, actually on different mats, then on imaginary surfaces
5. Walking in soft sand or on a pebbly beach

Happy/sad

1. Opening Christmas or birthday presents
2. Being lost and then found

3. Finding that a pet has disappeared, then it is brought back
4. Being locked up and then set free

Other sensations and feelings which can be used are love, hate, fear, pain, friendliness, disgust, suspense, acceptance, rejection, and indifference. Appropriate music and sound effects can be used to add significance to the mime and dramatic activities.

Miming can lead to play making, using interesting themes such as family situations, visits to the seaside or circus, reenacting television programs. Acting, dance, drama, and play making can be organized to include practice and consolidation of all the motor education areas, like gross and fine movements, coordination, rhythm, and balance. Obviously, it is not possible to deal in great detail with mime and drama, and the suggestions here are for activities which are particularly appropriate to programs of motor education.

PROBLEM SOLVING INVOLVING MOTOR ACTIVITY AND LANGUAGE

If body and spatial awareness and the use the body purposefully and efficiently are to be developed, the child should be given opportunities to think about and solve motor problems. These problems will involve different movements using the whole or parts of the body, changes in direction, speed, stress and strength, working individually or in groups, and organization in space, static or dynamic movement, at different levels.

The problems set will at first be simple, and gradually become more complicated.

1. Obeying simple instructions (for example, stand on one leg, stand on your toes, or heels, etc.)
2. Finding as many ways as possible to crawl, creep, walk, run, hop, jump
3. Getting from one side of the room to the other without touching the ropes on the floor, the shapes on the floor, the apparatus set out, etc.
4. Making shapes with the body or parts of the body
5. Finding as many different ways as possible to walk or run (for example, slowly, quickly, smoothly, jerkily, forward, backward, like a soldier, like a drunken man, happily, sadly, fearfully, full of confidence)
6. Finding ways of moving from A to B

7. In pairs, one child holding a hoop vertically or horizontally, finding ways of getting into, out of, under, over the hoop, without touching it
8. Finding ways of jumping over a cane or jump rope
9. Responding to prepositions, moving from A to B under the chair, over the benches, through the hoops, etc.
10. Finding ways of moving up a sloping bench (Which was the quickest, most comfortable, most painful?)
11. Moving across apparatus, set out as an obstacle course, without touching the floor
12. Making shapes in groups, seeing how many ways there are of making shapes, circles, squares, diamonds, and triangles, and how many children are needed to make each shape
13. Making up and acting a story about the obstacle course

In all this problem solving activity the children should be asked to talk about what they are doing or have done, to encourage the development of talking in sentences, with correct temporal sequencing and using prepositions, adverbs, and comparative and superlative adjectives. In later stages of the work, the children could also write about their motor activity. The following is an example of a young child's explanation of moving up a bench hooked to wallbars.

My exercise

First I lay on my tummy on the bench. Then I made myself stiff and grip the sides with my hands. Then I pulled with my arm muscles and slid up the bench. I did it all again until I reached the wall-bars. Then I pushed with my arms to get down.

SUGGESTIONS FOR PLANNING THE PROGRAMS AND INDIVIDUAL LESSONS

1. Short daily lessons are better than fewer longer ones.
2. As far as possible, make the work appropriate to the children's levels of motor development.
3. Each lesson should include activities to train in all the areas mentioned.
4. Always pay attention to the programming of activities and encourage children to perform new tasks to encourage feelings of making progress and achieving mastery. This means that lessons must be well planned yet the approach should remain

flexible to capitalize on the children's moods and reactions, and the teacher's inspiration.

5. With large classes covering a wide range of motor maturity and ability, group activities should be used.
6. For immature children and those with neuromotor disturbance, special groupings and timetabling are very desirable, particularly in schools with many retarded children. One or two teachers should specialize in motor education for these groups.
7. Always bear in mind the importance of speech and language, and where appropriate, discuss what is being done.
8. View motor development and education as an integral part of the total development and education process. This means that when possible reference should be made to areas such as sensory stimulation, visual and auditory perception, and thinking. Concepts of space and time, and those involved in early number and reading development should receive attention (counting with one-to-one correspondence, ordering things according to size, recognizing shapes and positions in space, or even words for these various objects). Liaison and discussion with other members of staff are essential to ensure the full effectiveness of this programmed comprehensive approach.
9. Motor education should be emotionally stimulating and satisfying and lead to greater self-confidence, self-awareness, and physical fitness.
10. Motor education should further the social development of children by encouraging cooperation, participation (as in group activities and games), tolerance, and friendliness.

Equipment and Useful Materials

Hoops of different colors and sizes
Jump ropes of different lengths
Bean bags and sand bags
Balls of different sizes, colors, and hardness
Plastic inflatables
Balance bench and/or beam
Trampoline or mattresses
Clubs or bowling pins
A variety of cut shapes of different colors and sizes
Programmed rolls of footstep patterns
Medicine balls
Ladders
Climbing frames
Jungle gym
Full-length mirror for body awareness work
Musical instruments, particularly percussion
Printed lines for balance work

Useful References

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Scott, L. B. 1968. "Rhymes for Learning Times," in *Learning Time with Language Experiences for Young Children.* New York: McGraw-Hill.

Tansley, A. E. 1986. *Perceptual Training.* Tucson, AZ: Communication Skill Builders.

ADDITIONAL BOOKS FOR CLASSROOM ACTIVITIES

Braley, W. T. et al. 1968. *Daily Sensorimotor Training Activities.* Baldwin, NY: Educational Activities.

Brehm, M., and N. T. Tindell. 1983. *Movement With a Purpose: Perceptual Motor Lessons for Young Children.* West Nyak, NY: Parker Publishing.

Cherry, C. 1971. *Creative Movement for the Developing Child.* Belmont, CA: Pitman Learning.

Doray, M. 1982. *J is for Jump.* Belmont, CA: Pitman Learning.

Gilroy, P. J. 1985. *Kids in Motion: An Early Childhood Movement Education Program.* Tucson, AZ: Communication Skill Builders.

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Record Keeping

This suggested motor development assessment chart has been included as a guide to teachers who wish to keep a simple record of children's progress through the motor programs.

Name _____ Date of Birth _____

1. Gross Motor Development

Crawls with rhythmic cross-pattern action ☐

Walks with good posture and cross-pattern action ☐

Hops on either leg ☐ Right ☐ Left ☐

Jumps: On the spot ☐ Forward ☐ Backward ☐

Skips rhythmically ☐

2. Body Awareness

a. Identifies on self

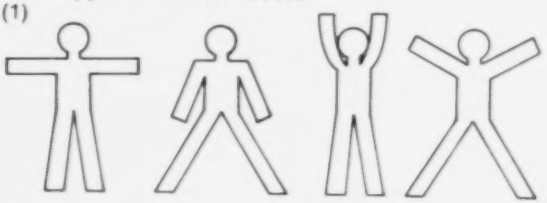
	as demonstrated	when asked	when touched
Head			
Eyes			
Nose			
Head			
Eyes			
Nose			
Mouth			
Ears			
Forehead			
Chin			
Arms			
Elbows			
Wrists			
Hands			
Fingers			
Legs			
Thighs			
Knees			
Ankles			
Feet			
Toes			
Shoulders			
Chest			
Waist			
Hips			

b. Identifies on others by touching or pointing

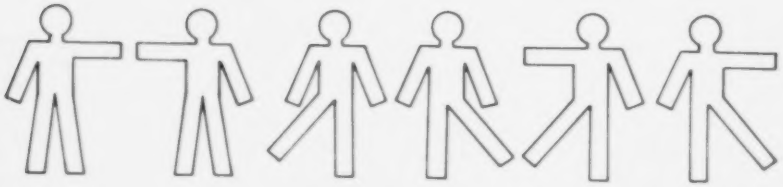
Head	☐	Fingers	☐
Eyes	☐	Legs	☐
Nose	☐	Thighs	☐
Mouth	☐	Knees	☐
Ears	☐	Ankles	☐
Forehead	☐	Feet	☐
Chin	☐	Toes	☐
Arms	☐	Shoulders	☐
Elbows	☐	Chest	☐
Wrists	☐	Waist	☐
Hands	☐	Hips	☐

c. Can copy when demonstrated

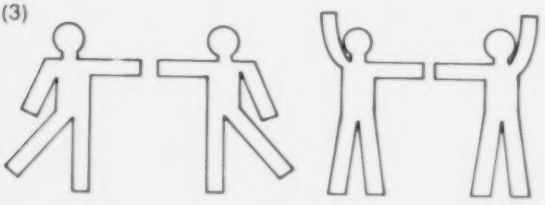
(1)



(2)



(3)



[In (2) and (3) mirroring accepted up to 7 to 8 years.]

d. Drawing of a person satisfies the following criteria:

(1) Not a stick drawing
(2) Vertical on page
(3) Symmetrical about vertical midline
(4) Main parts (head, neck, trunk, arms, and legs) are present in the right place
(5) Drawn to reasonable proportions

3. Body Coordinates

Responds quickly and correctly to requests to move body parts:

Both arms	☐
Both legs	☐
Right arm	☐
Left arm	☐
Right leg	☐
Left leg	☐
Left arm and leg	☐
Right arm and leg	☐
Right arm/left leg	☐
Left arm/right leg	☐
Angels in the Snow	☐

4. Fine Motor Control—Hand/Finger Dexterity

Can close fingers to palm and open to rhythm	Right ☐	Left ☐
Can touch tip of thumb with tip of each finger	Right ☐	Left ☐
Can close fingers to palm smoothly in turn, starting with little finger	Right ☐	Left ☐
With eyes closed, can identify which finger has been touched	Right ☐	Left ☐

5. Laterality and Dominance

Dominant hand	Right	Left	Mixed
Dominant foot	Right	Left	Mixed
Distinguishes right/left on self	Yes	No	
Distinguishes right/left on others	Yes	No	
Failure in motor inhibition	Yes	No	At times

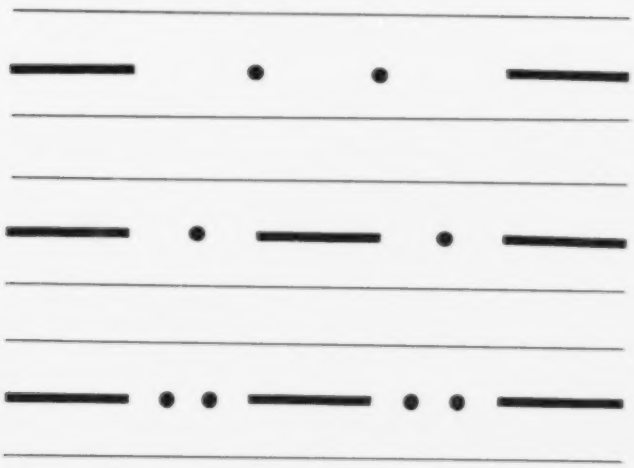
6. Directionality

Knows:

Up/down	☐
Forward/backward	☐
Sideways to the right or left	☐
Under/over/between	☐
Can change direction on request	☐

7. Rhythmic Patterns

Marches in time with given rhythm ☐
Can say rhythms using "dah" and "di" ☐
Can tap or clap rhythms ☐
Can tap and say rhythms simultaneously ☐



8. Hand-eye and Foot-eye Control

Catches a ball with two hands ☐
Holds pencil correctly ☐
Draws straight line 8" long with one continuous movement ☐
Kicks a stationary ball well ☐
Kicks a moving ball ☐
Pushes a ball around bowling pins with feet ☐
Can run and jump on a line ☐

9. Balance

Balances on right leg for 10 seconds keeping arms to sides ☐
Balances on left leg for 10 seconds keeping arms to sides ☐
Walks on footprints with crossing legs ☐
Walks heel to toe on line 15 feet long ☐
Walks forward and backward on long, low beam ☐

Additional resources for motor development . . .

PRE-SCISSOR SKILLS (1979)
PRE-SIGN LANGUAGE MOTOR SKILLS (1982)
PRE-WRITING SKILLS (1982)
PRE-DRESSING SKILLS (1983) *by Marsha Lee Dunn*

Four success skill programs for preschool or developmentally delayed children. With these self-teaching manuals, you can target your teaching to your students' current level of performance. Each book focuses on teaching necessary prerequisite skills from a motor development point of view.

Pre-Scissor Skills, Catalog No. 3101-Y $10.95
Pre-Sign Language Skills, Catalog No. 2085-Y $14.95
Pre-Writing Skills, Catalog No. 2089-Y $12.95
Pre-Dressing Skills, Catalog No. 4689-Y $14.95

KIDS IN MOTION (1985) *by Pamela J. Gilroy*

This well-rounded program for motor development presents weekly lessons for an entire school year. This easy-to-follow book contains complete 20-minute lessons for each school week, September through June. You can help your four- and five-year-olds build a foundation for gross motor skill development. The activities for each month have a specific focus—rhythms, partner stunts, identification of body parts, large group cooperative skills, and others. **Catalog No. 7227-Y $11.95**

Merle B. Karnes' EARLY CHILDHOOD RESOURCE BOOK (1985)
by Merle B. Karnes, Ed.D.

Here are 187 activities to enhance your preschool program . . . and strengthen language development. With this resource book, you can fill in your curriculum as you want. Tie these activities to your lessons or use them as lessons themselves. **Catalog No. 7275-Y $11.95**

Communication Skill Builders
3130 N. Dodge Blvd. / P.O. Box 42050
Tucson, Arizona 85733
(602) 323-7500

BEST COPY AVAILABLE

MOTOR EDUCATION

This book offers activity suggestions for those motor skills so important to children's growth and development . . . especially in the formative early years and in remedial programs. Activities include: gross and fine motor control, body awareness, balance, rhythm, right- and left-handedness, and mime and drama.

Specific vocabulary of body parts, actions, spatial relationships, categorization, and comparing can be taught using these activities. Use this book as a guideline for your preschool classroom or to supplement your individualized speech-language programs.

For ages 4-11

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